PATENT
Customer No. 22,852
Attorney Docket No. 03806.0449-02

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Continuation Application of:	)	
	)	
Michel BUREAU et al.	)	
	)	
Continuation of Serial No.: 09/341,350	)	
	)	Prior Group Art Unit: 1632
Filed: November 7, 2001	)	
	)	Prior Examiner: P. Brunovskis
For: IMPROVED METHOD FOR TRANSFERRING NUCLEIC ACID INTO THE STRIPED MUSCLE AND COMBINATION THEREFOR	)	

Commissioner for Patents and Trademarks
Washington, DC 20231

Sir:

PRELIMINARY AMENDMENT

Before examining this application, please amend it as follows:

IN THE SPECIFICATION:

Please delete the title and replace it with: - - A Method For Transferring Nucleic Acid Into Striated Muscles - -.

Please insert the Abstract as provided on the enclosed sheet.

IN THE CLAIMS:

Please cancel claims 1-84 without prejudice or disclaimer and add new claims 85-117 as follows:

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85. A method of promoting angiogenesis *in vivo* comprising:

contacting *in vivo* at least one striated muscle cell with at least one nucleic acid encoding at least one angiogenic factor, and electrically stimulating said at least one striated muscle cell with at least one unipolar pulse of an electric field intensity ranging from 1 to 800 V/cm^2.

86. The method according to claim 85, wherein said angiogenic factor is chosen from VEGF, FGF, angiopoietin 1, angiopoietin 2, and endothelin.

87. The method according to claim 86, wherein said angiogenic factor is VEGF.

88. The method according to claim 86, wherein said angiogenic factor is FGF.

89. The method according to claim 88, wherein said FGF is FGF 1.

90. The method according to claim 85, wherein said at least one striated muscle cell is a heart muscle cell.

91. The method according to claim 85, wherein said at least one striated muscle cell is a skeletal muscle cell.

92. The method according to claim 85, wherein said at least one nucleic acid is injected into a segment of striated muscle.

93. The method according to claim 92, wherein said segment of striated muscle is a segment of heart muscle.

94. The method according to claim 92, wherein said segment of striated muscle is a segment of skeletal muscle.

95. The method according to claim 85, wherein said at least one nucleic acid is injected by a systemic route.

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96. The method according to claim 85, wherein said at least one nucleic acid is injected by an intra-arterial or intravenous route.

97. The method according to claim 85, wherein said electric field intensity ranges from 1 to 400 V/cm^2.

98. The method according to claim 97, wherein said electric field intensity ranges from 1 to 200 V/cm^2.

99. The method according to claim 98, wherein said electric field intensity ranges from 100 to 200 V/cm^2.

100. The method according to claim 85, wherein said electric stimulation is greater than 10 milliseconds in duration.

101. The method according to claim 85, wherein said electrical stimulation comprises from 1 to 100,000 unipolar pulses.

102. The method according to claim 85, wherein said at least one unipolar pulse is chosen from square wave pulses and exponentially decreasing pulses.

103. A method of promoting angiogenesis in a heart muscle *in vivo* comprising: contacting *in vivo* at least one heart muscle cell with at least one nucleic acid encoding VEGF, and electrically stimulating said at least one heart muscle cell with at least one unipolar pulse of an electric field intensity ranging from 1 to 800 V/cm^2.

104. A method of promoting hemostasis *in vivo* comprising: contacting *in vivo* at least one striated muscle cell with at least one nucleic acid encoding at least one blood-clotting factor, and electrically stimulating said at least one striated muscle

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cell with at least one unipolar pulse of an electric field intensity ranging from 1 to 800 V/cm^2.

105. The method according to claim 104, wherein said blood-clotting factor is chosen from factor VII, factor VIII, and factor IX.

106. The method according to claim 105, wherein said blood-clotting factor is factor IX.

107. A method of stimulating nerve growth *in vivo* comprising: contacting *in vivo* at least one striated muscle cell with at least one nucleic acid encoding at least one neurotrophic factor, and electrically stimulating said at least one striated muscle cell with at least one unipolar pulse of an electric field intensity ranging from 1 to 800 V/cm^2.

108. The method according to claim 107, wherein said neurotrophic factor is chosen from NGF, BDNF, NT3, NT4/5, and NT6.

109. A method of promoting formation of red blood cells *in vivo* comprising: contacting *in vivo* at least one striated muscle cell with at least one nucleic acid encoding at least one hematopoietic factor, and electrically stimulating said at least one striated muscle cell with at least one unipolar pulse of an electric field intensity ranging from 1 to 800 V/cm^2.

110. The method according to claim 109, where said at least one hematopoietic factor is chosen from erythropoietin, GM-CSF, M-CSF, and LIF.

111. A method of producing expression of human factor IX *in vivo* in striated muscle comprising: contacting *in vivo* at least one striated muscle cell with at least one

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nucleic acid encoding said human factor IX; and electrically stimulating said at least one striated muscle cell with at least one unipolar pulse of an electric field intensity ranging from 1 to 800 V/cm^2.

112. A method of producing expression of secreted alkaline phosphatase (SeAP) *in vivo* in striated muscle comprising: contacting *in vivo* at least one striated muscle cell with at least one nucleic acid encoding said SeAP; and electrically stimulating said at least one striated muscle cell with at least one unipolar pulse of an electric field intensity ranging from 1 to 800 V/cm^2.

113. A method of producing expression of erythropoietin (EPO) *in vivo* in striated muscle comprising: contacting *in vivo* at least one striated muscle cell with at least one nucleic acid encoding said EPO; and electrically stimulating said at least one striated muscle cell with at least one unipolar pulse of an electric field intensity ranging from 1 to 800 V/cm^2.

114. A method of producing expression of vascular endothelium growth factor (VEGF) *in vivo* in striated muscle comprising: contacting *in vivo* at least one striated muscle cell with at least one nucleic acid encoding said VEGF; and electrically stimulating said at least one striated muscle cell with at least one unipolar pulse of an electric field intensity ranging from 1 to 800 V/cm^2.

115. A method of producing expression of fibroblast growth factor 1 (FGF1) *in vivo* in striated muscle comprising: contacting *in vivo* at least one striated muscle cell with at least one nucleic acid encoding said FGF1; and electrically stimulating said at

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least one striated muscle cell with at least one unipolar pulse of an electric field intensity ranging from 1 to 800 V/cm^2.

116. A method of producing expression of neurotrophin 3 (NT3) *in vivo* in striated muscle comprising: contacting *in vivo* at least one striated muscle cell with at least one nucleic acid encoding said NT3; and electrically stimulating said at least one striated muscle cell with at least one unipolar pulse of an electric field intensity ranging from 1 to 800 V/cm^2.

117. A method of producing expression of human growth hormone *in vivo* in striated muscle comprising: contacting *in vivo* at least one striated muscle cell with at least one nucleic acid encoding said human growth hormone; and electrically stimulating said at least one striated muscle cell with at least one unipolar pulse of an electric field intensity ranging from 1 to 800 V/cm^2.

REMARKS

With entry of this amendment, claims 85-117 are now pending in this application.

Support for the amendments can be found in the specification as filed. For example, support for the methods of

claims 85 and 114 may be found on page 10, line 1-4, page 14, line 12-13, and page 71, Example 20;

claims 104 and 111 may be found on page 13, line 25 and page 72, Example 21;

claims 107 and 116 may be found on page 14, line 15 and page 76, Example 23;

claims 109 and 113 may be found on page 15, lines 1-2 and page 69,

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claims 109 and 113 may be found on page 15, lines 1-2 and page 69, Example 19; and

claims 112, 115, and 117, on page 66, Example 18, page 74, Example 22, and page 79, Example 24, respectively.

No new matter has been added and none of the claims has been amended to overcome prior art. Claims 1-84 are cancelled without prejudice to or disclaimer thereof and Applicants reserve the right to pursue claims of similar scope in another application.

CONCLUSION

If there are any additional fees due in connection with the filing of this Preliminary Amendment, please charge the fees to our Deposit Account No. 06-0916. If a fee is required for an extension of time under 37 C.F.R. § 1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account.

Respectfully submitted,
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By: _____
Steven P. O'Connor
Reg. No. 41,225

Date: November 7, 2001

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